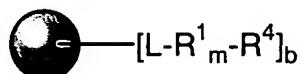


In the claims:

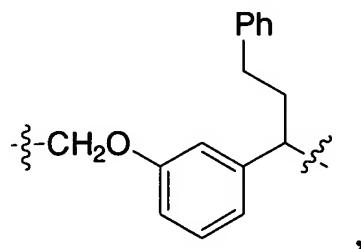
1. (Original) A process for the preparation of a compound of the formula I:



I

wherein

is an insoluble solid support selected from the group consisting of: poly(styrene-divinylbenzene), macroreticular poly(styrene-divinylbenzene), polystyrene which is radiation grafted to polypropylene, polystyrene which is radiation grafted to polyethylene, polystyrene which is radiation grafted to poly(tetrafluoroethylene), and polystyrene which is radiation grafted to poly(ethylene-tetrafluoroethylene) wherein the insoluble solid support is in a shape selected from a bead, a tube, a rod, a ring, a disk, or a well; L is  $-CH_2-$ ,  $-C(CH_3)_2-$ ,  $-CH(CH_3)-$ ,  $-(CH_2)_nCH(CN)-$ ,  $-(CH_2)_nCH(CO_2Me)-$ ,  $-(CH_2)_nCH(Ph)-$ ,  $-(CH_2)_nC(CH_3, Ph)-$ ,  $-CH(CH_2CH_2Ph)-$ , or

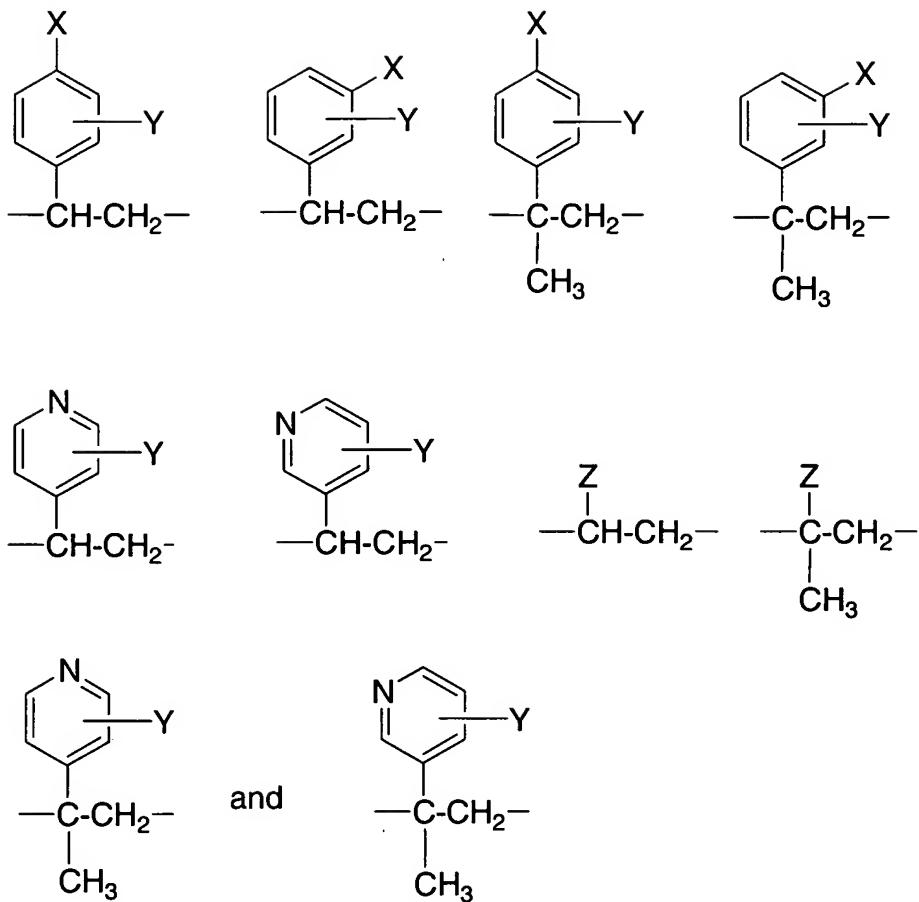


n is zero or an integer from 1 to 5;

m is zero or an integer from 1 to 100;

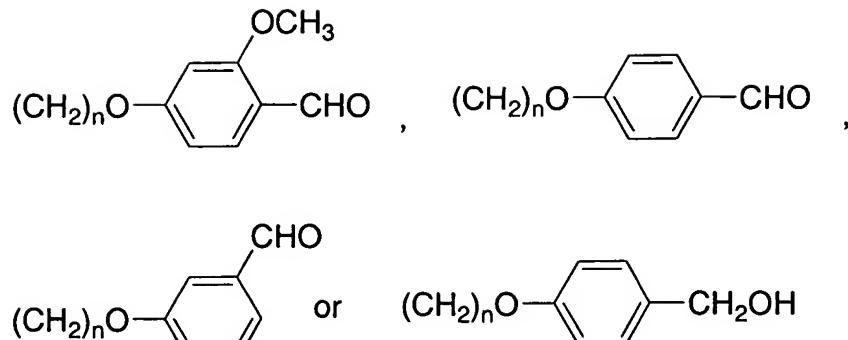
b is mMol content of initiator or solid-supported polymer per gram of insoluble solid support and is about 0.1 to about 5.0 mMol per gram;

$R^1$  is selected from:



wherein

X is H, F, (CH<sub>2</sub>)<sub>n</sub>Cl, (CH<sub>2</sub>)<sub>n</sub>Br, (CH<sub>2</sub>)<sub>n</sub>I, B(OH)<sub>2</sub>, (CH<sub>2</sub>)<sub>n</sub>CH=CH<sub>2</sub>, NCO, CH<sub>2</sub>NCO, CH(CH<sub>3</sub>)NCO, C(CH<sub>3</sub>)<sub>2</sub>NCO, CO<sub>2</sub>Me, CO<sub>2</sub>Et, CO<sub>2</sub>(t-Bu), CO<sub>2</sub>H, COC1, CO<sub>2</sub>CH(CF<sub>3</sub>)<sub>2</sub>, CO<sub>2</sub>Ph, CO<sub>2</sub>(pentafluorophenyl), CO<sub>2</sub> (pentachlorophenyl), CO<sub>2</sub> (N-succinimidyl), C(OMe)<sub>3</sub>, C(OEt)<sub>3</sub>, (CH<sub>2</sub>)<sub>n</sub>OH, (CH<sub>2</sub>)<sub>n</sub>CH(OH)CH<sub>2</sub>OH, (CH<sub>2</sub>)<sub>n</sub>SH, CH<sub>2</sub>NHCH<sub>2</sub>CH<sub>2</sub>SH, (CH<sub>2</sub>)<sub>n</sub>NHC(=S)NH<sub>2</sub>, (CH<sub>2</sub>)<sub>n</sub>NH<sub>2</sub>, (CH<sub>2</sub>)<sub>n</sub>N(Me)<sub>2</sub>, (CH<sub>2</sub>)<sub>n</sub>N(Et)<sub>2</sub>, (CH<sub>2</sub>)<sub>n</sub>(iPr)<sub>2</sub>, CH(CH<sub>3</sub>)NH<sub>2</sub>, C(CH<sub>3</sub>)<sub>2</sub>NH<sub>2</sub>, CH<sub>2</sub>NHCH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>, CH<sub>2</sub>NHCH<sub>2</sub>CH<sub>2</sub>NHCH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>, CH<sub>2</sub>N(CH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>)<sub>2</sub>, CH<sub>2</sub>NHCH<sub>2</sub>CH<sub>2</sub>N(CH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>)<sub>2</sub>, CH<sub>2</sub>N(CH<sub>2</sub>CH<sub>2</sub>OH)<sub>2</sub>, (CH<sub>2</sub>)<sub>n</sub>(morpholin-4-yl), (CH<sub>2</sub>)<sub>n</sub>(piperidin-1-yl), (CH<sub>2</sub>)<sub>n</sub>(4-methylpiperazin-1-yl), N(SO<sub>2</sub>CF<sub>3</sub>)<sub>2</sub>, (CH<sub>2</sub>)<sub>n</sub>CHO, (CH<sub>2</sub>)<sub>n</sub>Si(Me)<sub>2</sub>H, (CH<sub>2</sub>)<sub>n</sub>Si(Et)<sub>2</sub>H, (CH<sub>2</sub>)<sub>n</sub>Si(iPr)<sub>2</sub>H, (CH<sub>2</sub>)<sub>n</sub>Si(tBu)<sub>2</sub>H, (CH<sub>2</sub>)<sub>n</sub>Si(Ph)<sub>2</sub>H, (CH<sub>2</sub>)<sub>n</sub>Si(Ph)(tBu)H, (CH<sub>2</sub>)<sub>n</sub>Si(Me)<sub>2</sub>C1, (CH<sub>2</sub>)<sub>n</sub>Si(Et)<sub>2</sub>Cl, (CH<sub>2</sub>)<sub>n</sub>Si(i-Pr)<sub>2</sub>Cl, (CH<sub>2</sub>)<sub>n</sub>Si(tBu)<sub>2</sub>Cl, (CH<sub>2</sub>)<sub>n</sub>Si(Ph)<sub>2</sub>Cl, (CH<sub>2</sub>)<sub>n</sub>Si(tBu)(Ph)Cl, P(Ph)<sub>2</sub>, P(o-tolyl)<sub>2</sub>,

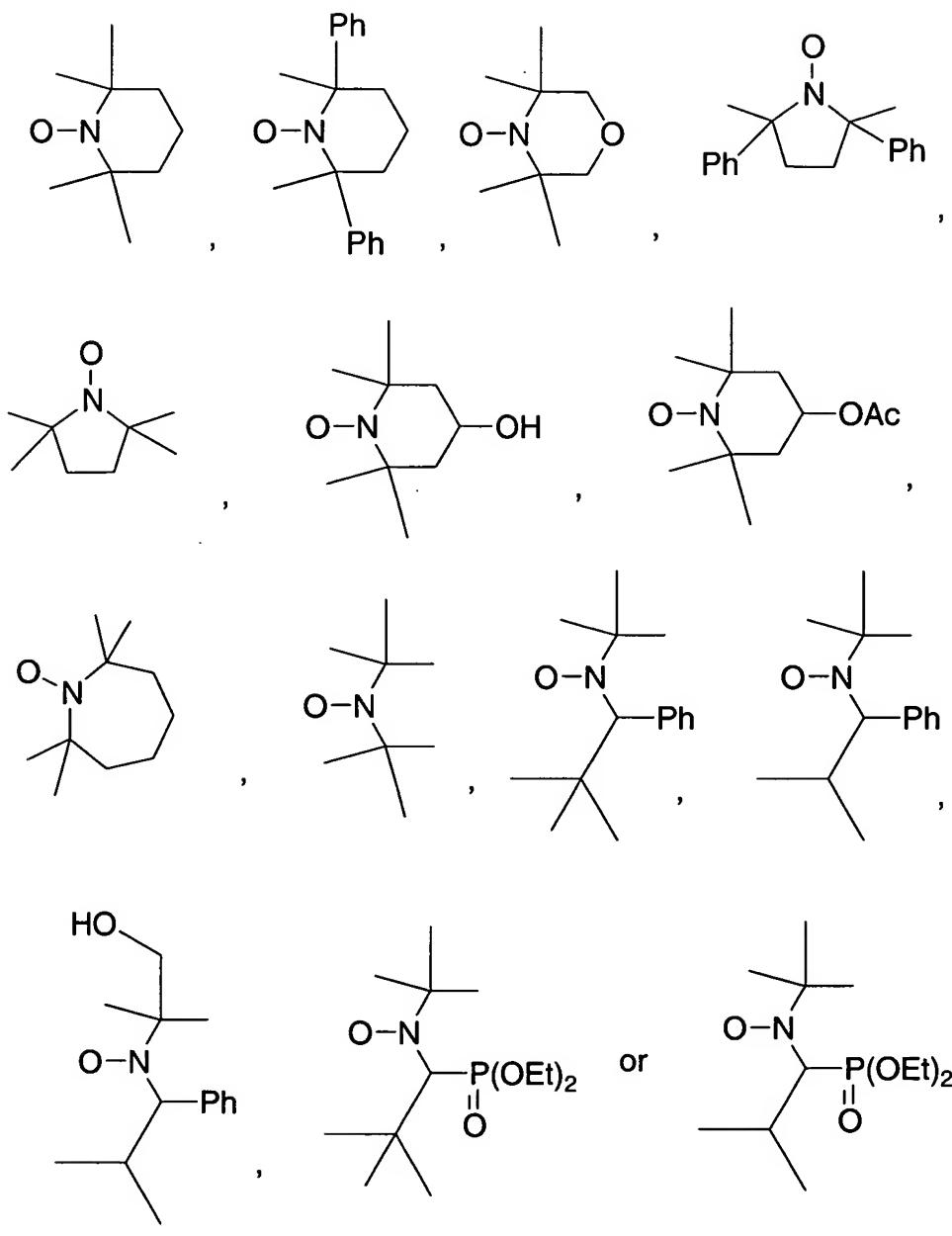


wherein n is zero or an integer from 1 to 5 ;

Y is H, Cl, Br, F, OH, or OMe;

Z is NCO,  $\text{CO}_2\text{Me}$ ,  $\text{CO}_2\text{Et}$ ,  $\text{CO}_2(\text{i-Pr})$ ,  $\text{CO}_2(\text{n-Bu})$ ,  $\text{CO}_2(\text{t-Bu})$ , CN,  $\text{CO}_2\text{H}$ , COCl,  
 $\text{CO}_2\text{CH}(\text{CF}_3)_2$ ,  $\text{CO}_2$  (pentafluorophenyl),  $\text{CO}_2$  (pentachlorophenyl),  $\text{CO}_2\text{Ph}$ ,  $\text{CO}_2(\text{N}-$   
succinimidyl),  $\text{C}(\text{OMe})_3$ ,  $\text{C}(\text{OEt})_2$ ,  $\text{CON}(\text{OCH}_3)\text{CH}_3$ , CHO,  $\text{CH}_2\text{OH}$ , or  $\text{C}(\text{CH}_3)_2\text{OH}$ ;  
and

$\text{R}^4$  is

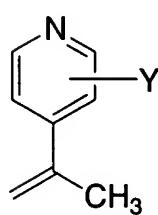
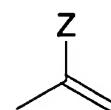
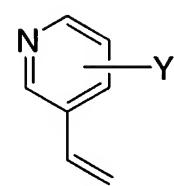
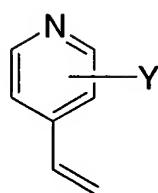
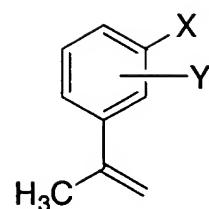
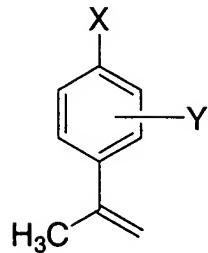
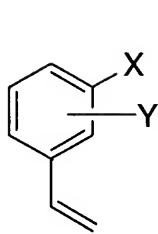
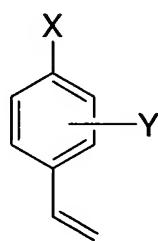


which comprises the step of microwave irradiating a mixture comprising a compound of the formula II

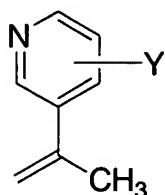


II

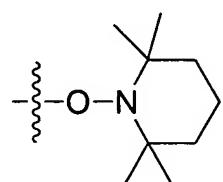
and a compound III selected from:



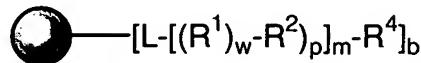
and



2. (Original) The process according to Claim 1 wherein  $R^4$  is



3. (Original) A process for the preparation of a compound of the formula IV:

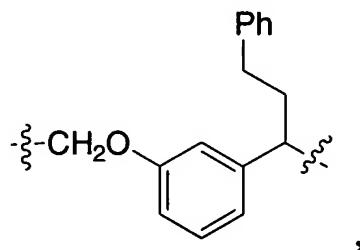


IV

wherein



is an insoluble solid support selected from the group consisting of: poly(styrene-divinylbenzene), macroreticular poly(styrene-divinylbenzene), polystyrene which is radiation grafted to polypropylene, polystyrene which is radiation grafted to polyethylene, polystyrene which is radiation grafted to poly(tetrafluoroethylene), and polystyrene which is radiation grafted to poly(ethylene-tetrafluoroethylene) wherein the insoluble solid support is in a shape selected from a bead, a tube, a rod, a ring, a disk, or a well; L is -CH<sub>2</sub>- , -C(CH<sub>3</sub>)<sub>2</sub>- , -CH(CH<sub>3</sub>)- , -(CH<sub>2</sub>)<sub>n</sub>CH(CN)- , -(CH<sub>2</sub>)<sub>n</sub>CH(CO<sub>2</sub>Me)- , -(CH<sub>2</sub>)<sub>n</sub>CH(Ph)- , -(CH<sub>2</sub>)<sub>n</sub>C(CH<sub>3</sub>, Ph)- , -CH(CH<sub>2</sub>CH<sub>2</sub>Ph)- , or



n is zero or an integer from 1 to 5;

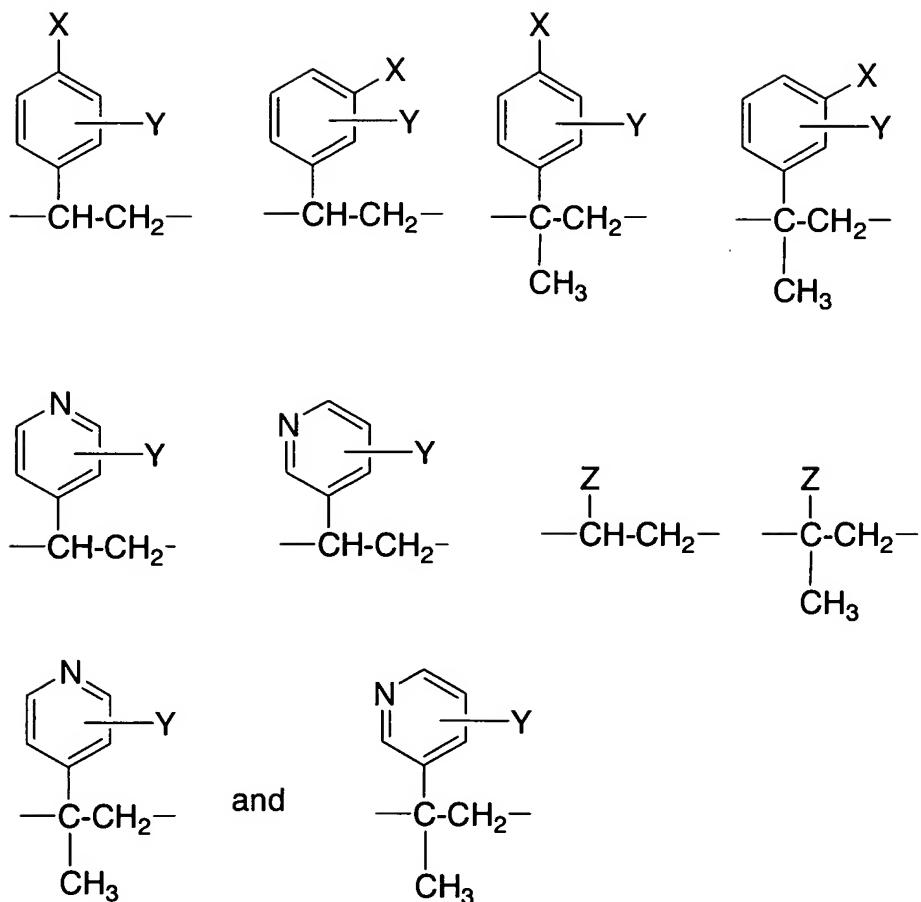
m is zero or an integer from 1 to 100;

w is an integer from 1 to 10;

p is zero or an integer from 1 to 10;

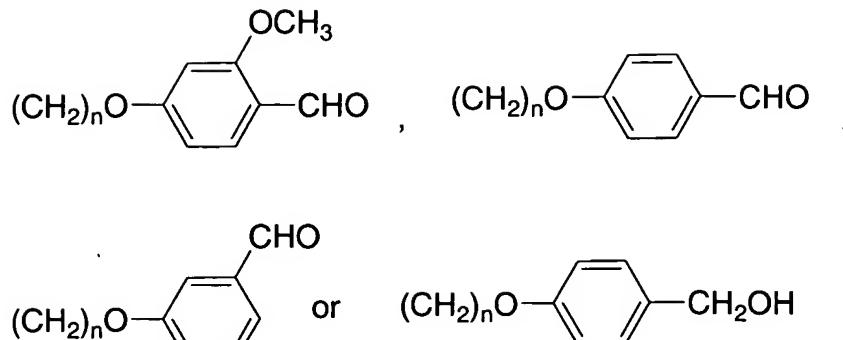
b is mMol content of initiator or solid-supported polymer per gram of insoluble solid support and is about 0.1 to about 5.0 mMol per gram;

R<sup>1</sup> and R<sup>2</sup> are each independently the same or different and are selected from



wherein

X is H, F, (CH<sub>2</sub>)<sub>n</sub>Cl, (CH<sub>2</sub>)<sub>n</sub>Br, (CH<sub>2</sub>)<sub>n</sub>I, B(OH)<sub>2</sub>, (CH<sub>2</sub>)<sub>n</sub>CH=CH<sub>2</sub>, NCO, CH<sub>2</sub>NCO, CH(CH<sub>3</sub>)NCO, C(CH<sub>3</sub>)<sub>2</sub>NCO, CO<sub>2</sub>Me, CO<sub>2</sub>Et, CO<sub>2</sub>(t-Bu), CO<sub>2</sub>H, COC1, CO<sub>2</sub>CH(CF<sub>3</sub>)<sub>2</sub>, CO<sub>2</sub>Ph, CO<sub>2</sub>(pentafluorophenyl), CO<sub>2</sub>(pentachlorophenyl), CO<sub>2</sub>(N-succinimidyl), C(OMe)<sub>3</sub>, C(OEt)<sub>3</sub>, (CH<sub>2</sub>)<sub>n</sub>OH, (CH<sub>2</sub>)<sub>n</sub>CH(OH)CH<sub>2</sub>OH, (CH<sub>2</sub>)<sub>n</sub>SH, CH<sub>2</sub>NHCH<sub>2</sub>CH<sub>2</sub>SH, (CH<sub>2</sub>)<sub>n</sub>NHC(=S)NH<sub>2</sub>, (CH<sub>2</sub>)<sub>n</sub>NH<sub>2</sub>, (CH<sub>2</sub>)<sub>n</sub>N(Me)<sub>2</sub>, (CH<sub>2</sub>)<sub>n</sub>N(Et)<sub>2</sub>, (CH<sub>2</sub>)<sub>n</sub>(iPr)<sub>2</sub>, CH(CH<sub>3</sub>)NH<sub>2</sub>, C(CH<sub>3</sub>)<sub>2</sub>NH<sub>2</sub>, CH<sub>2</sub>NHCH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>, CH<sub>2</sub>NHCH<sub>2</sub>CH<sub>2</sub>NHCH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>, CH<sub>2</sub>N(CH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>)<sub>2</sub>, CH<sub>2</sub>NHCH<sub>2</sub>CH<sub>2</sub>N(CH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>)<sub>2</sub>, CH<sub>2</sub>N(CH<sub>2</sub>CH<sub>2</sub>OH)<sub>2</sub>, (CH<sub>2</sub>)<sub>n</sub>(morpholin-4-yl), (CH<sub>2</sub>)<sub>n</sub>(piperidin-1-yl), (CH<sub>2</sub>)<sub>n</sub>(4-methylpiperazin-1-yl), N(SO<sub>2</sub>CF<sub>3</sub>)<sub>2</sub>, (CH<sub>2</sub>)<sub>n</sub>CHO, (CH<sub>2</sub>)<sub>n</sub>Si(Me)<sub>2</sub>H, (CH<sub>2</sub>)<sub>n</sub>Si(Et)<sub>2</sub>H, (CH<sub>2</sub>)<sub>n</sub>Si(iPr)<sub>2</sub>H, (CH<sub>2</sub>)<sub>n</sub>Si(tBu)<sub>2</sub>H, (CH<sub>2</sub>)<sub>n</sub>Si(Ph)<sub>2</sub>H, (CH<sub>2</sub>)<sub>n</sub>Si(Ph)(tBu)H, (CH<sub>2</sub>)<sub>n</sub>Si(Me)<sub>2</sub>Cl, (CH<sub>2</sub>)<sub>n</sub>Si(Et)<sub>2</sub>Cl, (CH<sub>2</sub>)<sub>n</sub>Si(i-Pr)<sub>2</sub>Cl, (CH<sub>2</sub>)<sub>n</sub>Si(tBu)<sub>2</sub>Cl, (CH<sub>2</sub>)<sub>n</sub>Si(Ph)<sub>2</sub>Cl, (CH<sub>2</sub>)<sub>n</sub>Si(tBu)(Ph)Cl, P(Ph)<sub>2</sub>, P(o-tolyl)<sub>2</sub>,

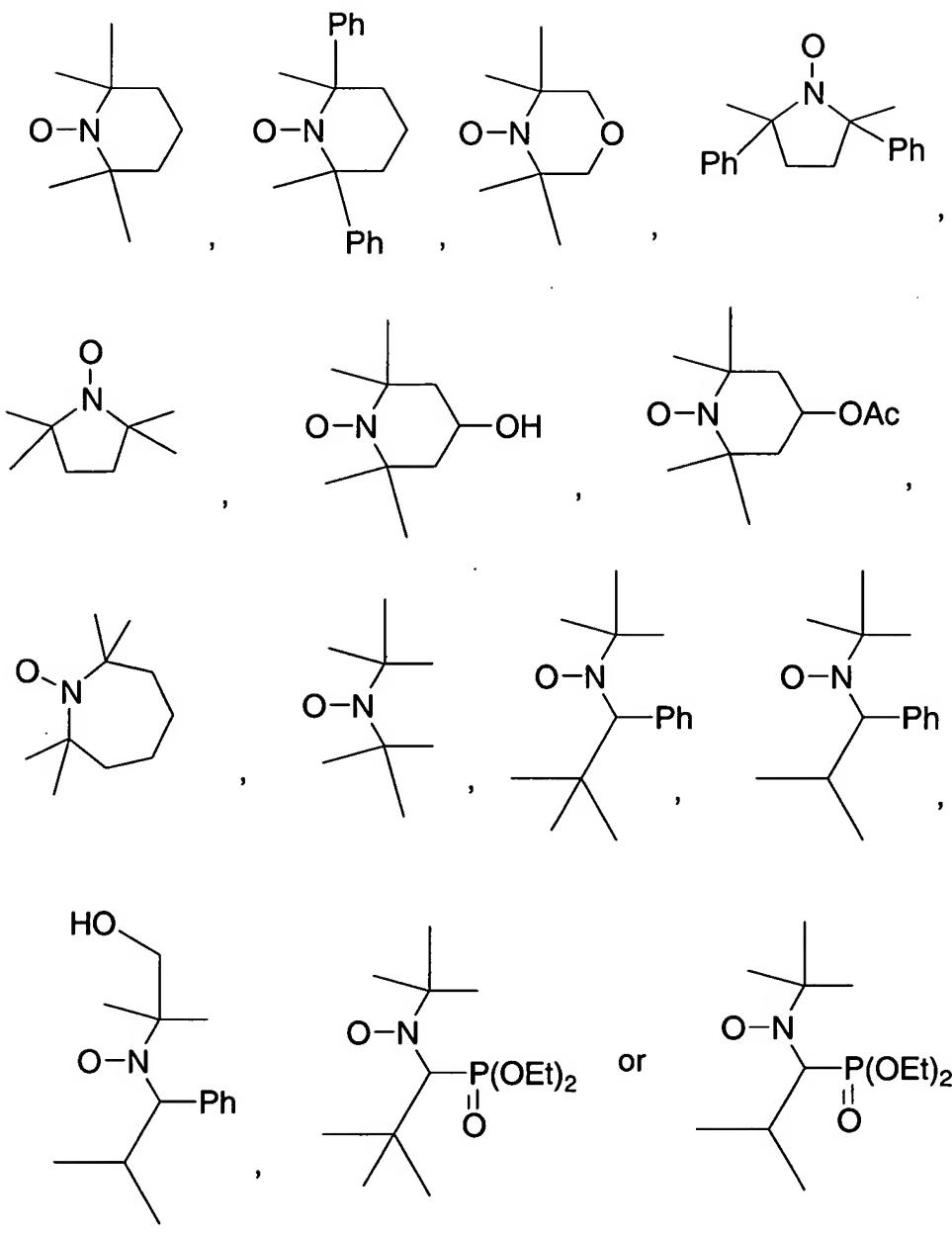


wherein n is zero or an integer from 1 to 5;

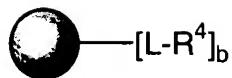
Y is H, C1, Br, F, OH, or OMe;

Z is NCO, CO<sub>2</sub>Me, CO<sub>2</sub>Et, CO<sub>2</sub> (i-Pr), CO<sub>2</sub>(n-Bu), CO<sub>2</sub>(t-Bu), CN, CO<sub>2</sub>H, COCl, CO<sub>2</sub>CH(CF<sub>3</sub>)<sub>2</sub>, CO<sub>2</sub>(pentafluorophenyl), CO<sub>2</sub>(pentachlorophenyl), CO<sub>2</sub>Ph, CO<sub>2</sub>(N-succinimidyl), C(OMe)<sub>3</sub>, C(OEt)<sub>2</sub>, CON(OCH<sub>3</sub>)CH<sub>3</sub>, CHO, CH<sub>2</sub>OH, or C(CH<sub>3</sub>)<sub>2</sub>OH; and

R<sup>4</sup> is

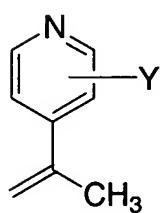
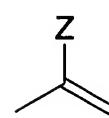
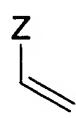
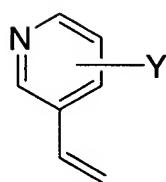
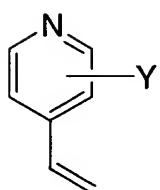
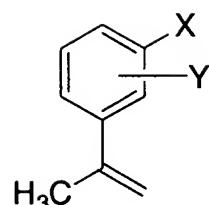
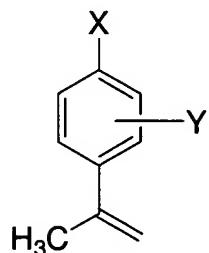
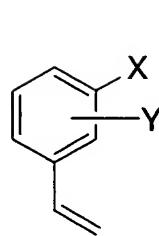
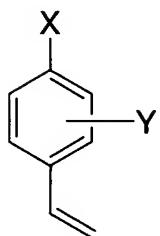


which comprises the step of microwave irradiating a mixture comprising a compound of the formula II

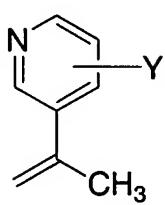


II ,

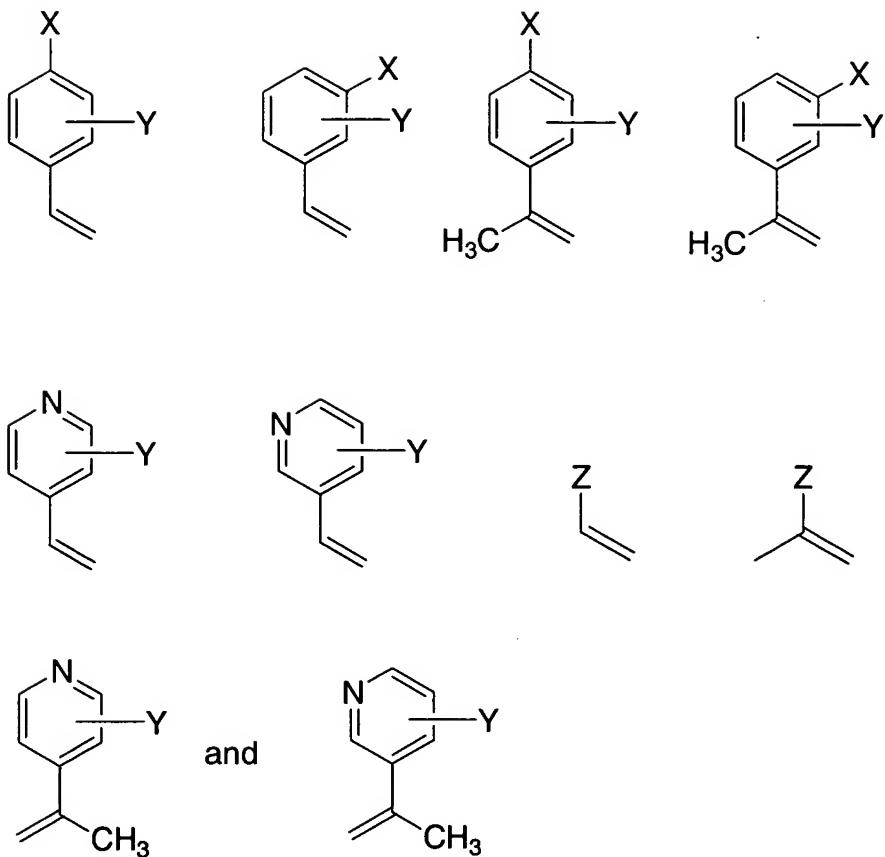
a compound III selected from:



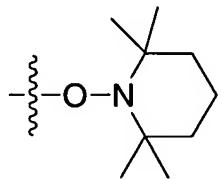
and



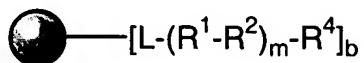
and a compound V selected from:



4. (Original) The process according to Claim 3 wherein  $R^4$  is



5. (Original) A process for the preparation of a compound of the formula VI:

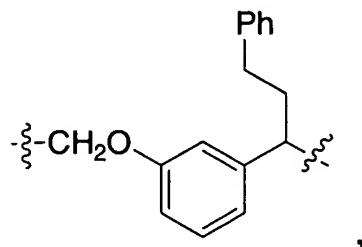


VI

wherein



is an insoluble solid support selected from the group consisting of: poly(styrene-divinylbenzene), macroreticular poly(styrene-divinylbenzene), polystyrene which is radiation grafted to polypropylene, polystyrene which is radiation grafted to polyethylene, polystyrene which is radiation grafted to poly(tetrafluoroethylene), and polystyrene which is radiation grafted to poly(ethylene-tetrafluoroethylene) wherein the insoluble solid support is in a shape selected from a bead, a tube, a rod, a ring, a disk, or a well; L is -CH<sub>2</sub>- , -C(CH<sub>3</sub>)<sub>2</sub>- , -CH(CH<sub>3</sub>)- , -(CH<sub>2</sub>)<sub>n</sub>CH(CN)- , -(CH<sub>2</sub>)<sub>n</sub>CH(CO<sub>2</sub>Me)- , -(CH<sub>2</sub>)<sub>n</sub>CH(Ph)- , -(CH<sub>2</sub>)<sub>n</sub>C(CH<sub>3</sub>, Ph)- , -CH(CH<sub>2</sub>CH<sub>2</sub>Ph)- , or



n is zero or an integer from 1 to 5;

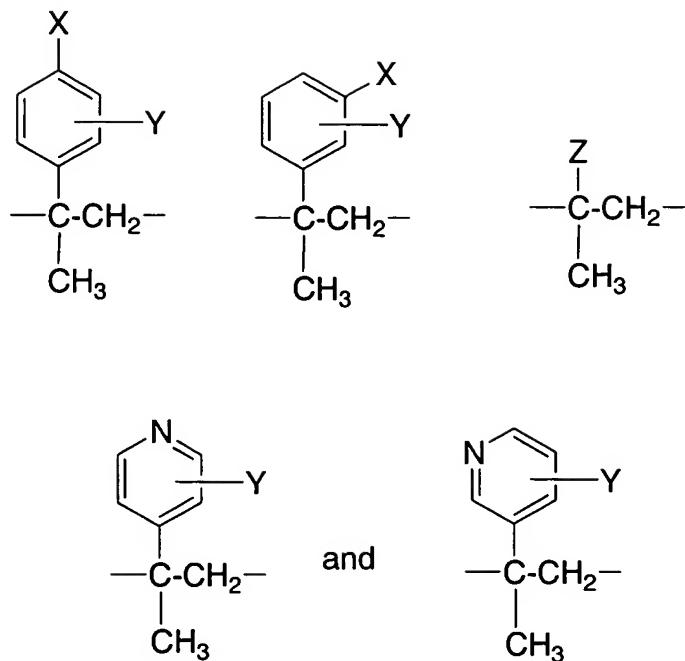
m is zero or an integer from 1 to 100;

w is an integer from 1 to 10;

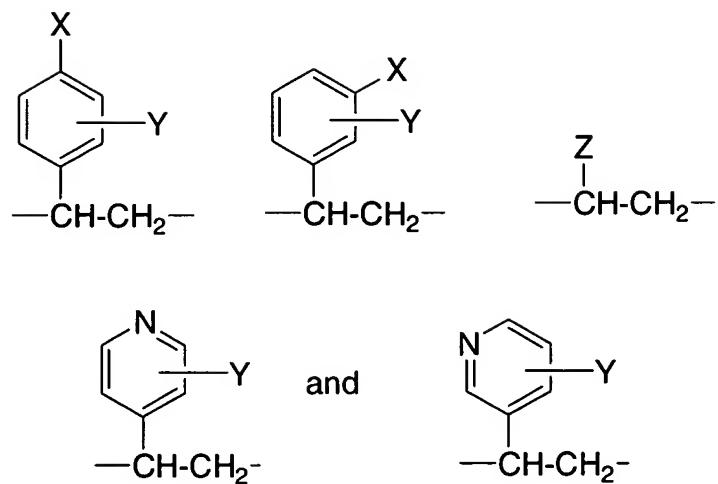
p is zero or an integer from 1 to 10;

b is mMol content of initiator or solid-supported polymer per gram of insoluble solid support and is about 0.1 to about 5.0 mMol per gram;

R<sup>1</sup> is selected from



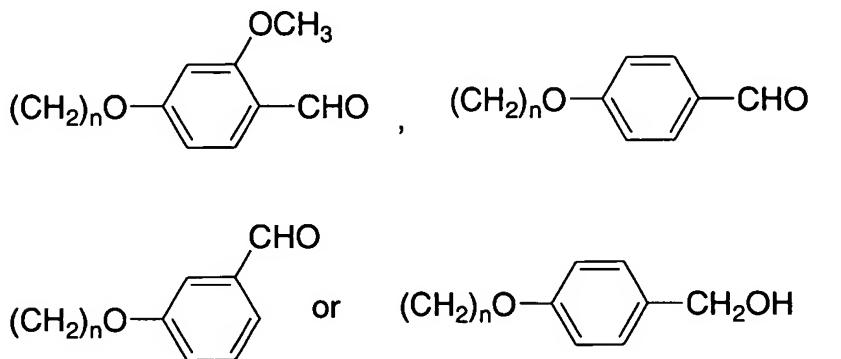
$R^2$  is selected from



wherein

X is H, F,  $(CH_2)_nCl$ ,  $(CH_2)_nBr$ ,  $(CH_2)_nI$ ,  $B(OH)_2$ ,  $(CH_2)_nCH=CH_2$ , NCO,  $CH_2NCO$ ,  $CH(CH_3)NCO$ ,  $C(CH_3)_2NCO$ ,  $CO_2Me$ ,  $CO_2Et$ ,  $CO_2(t\text{-}Bu)$ ,  $CO_2H$ , COC1,  $CO_2CH(CF_3)_2$ ,  $CO_2Ph$ ,  $CO_2$ (pentafluorophenyl),  $CO_2$ (pentachlorophenyl),  $CO_2$ (N-succinimidyl),  $C(OMe)_3$ ,  $C(OEt)_3$ ,  $(CH_2)_nOH$ ,  $(CH_2)_nCH(OH)CH_2OH$ ,  $(CH_2)_nSH$ ,  $CH_2NHCH_2CH_2SH$ ,  $(CH_2)_nNHC(=S)NH_2$ ,  $(CH_2)_nNH_2$ ,  $(CH_2)_nN(Me)_2$ ,  $(CH_2)_nN(Et)_2$ ,  $(CH_2)_n(iPr)_2$ ,  $CH(CH_3)NH_2$ ,  $C(CH_3)_2NH_2$ ,  $CH_2NHCH_2CH_2NH_2$ ,  $CH_2NHCH_2CH_2NHCH_2CH_2NH_2$ ,

$\text{CH}_2\text{N}(\text{CH}_2\text{CH}_2\text{NH}_2)_2$ ,  $\text{CH}_2\text{NHCH}_2\text{CH}_2\text{N}(\text{CH}_2\text{CH}_2\text{NH}_2)_2$ ,  $\text{CH}_2\text{N}(\text{CH}_2\text{CH}_2\text{OH})_2$ ,  
 $(\text{CH}_2)_n(\text{morpholin}-4-\text{yl})$ ,  $(\text{CH}_2)_n(\text{piperidin}-1-\text{yl})$ ,  $(\text{CH}_2)_n(4\text{-methylpiperazin}-1-\text{yl})$ ,  
 $\text{N}(\text{SO}_2\text{CF}_3)_2$ ,  $(\text{CH}_2)_n\text{CHO}$ ,  $(\text{CH}_2)_n\text{Si}(\text{Me})_2\text{H}$ ,  $(\text{CH}_2)_n\text{Si}(\text{Et})_2\text{H}$ ,  $(\text{CH}_2)_n\text{Si}(\text{iPr})_2\text{H}$ ,  
 $(\text{CH}_2)_n\text{Si}(\text{tBu})_2\text{H}$ ,  $(\text{CH}_2)_n\text{Si}(\text{Ph})_2\text{H}$ ,  $(\text{CH}_2)_n\text{Si}(\text{Ph})(\text{tBu})\text{H}$ ,  $(\text{CH}_2)_n\text{Si}(\text{Me})_2\text{Cl}$ ,  $(\text{CH}_2)_n\text{Si}(\text{Et})_2\text{Cl}$ ,  
 $(\text{CH}_2)_n\text{Si}(\text{i-Pr})_2\text{Cl}$ ,  $(\text{CH}_2)_n\text{Si}(\text{tBu})_2\text{Cl}$ ,  $(\text{CH}_2)_n\text{Si}(\text{Ph})_2\text{Cl}$ ,  $(\text{CH}_2)_n\text{Si}(\text{tBu})(\text{Ph})\text{Cl}$ ,  $\text{P}(\text{Ph})_2$ ,  
 $\text{P}(\text{o-tolyl})_2$ ,

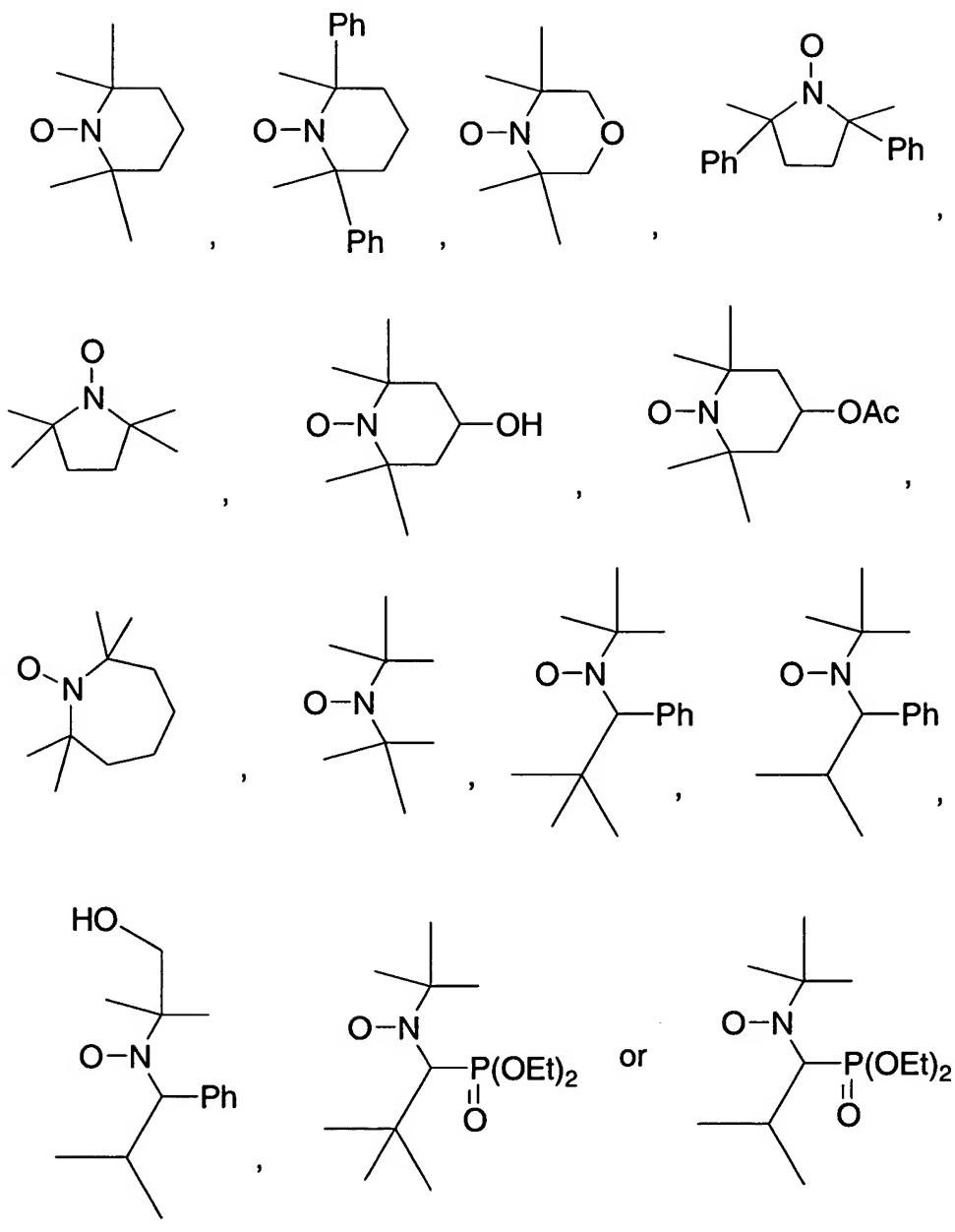


wherein n is zero or an integer from 1 to 5;

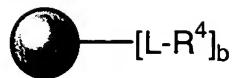
Y is H, C1, Br, F, OH, or OMe;

Z is NCO,  $\text{CO}_2\text{Me}$ ,  $\text{CO}_2\text{Et}$ ,  $\text{CO}_2(\text{i-Pr})$ ,  $\text{CO}_2(\text{n-Bu})$ ,  $\text{CO}_2(\text{t-Bu})$ , CN,  $\text{CO}_2\text{H}$ , COCl,  
 $\text{CO}_2\text{CH}(\text{CF}_3)_2$ ,  $\text{CO}_2(\text{pentafluorophenyl})$ ,  $\text{CO}_2(\text{pentachlorophenyl})$ ,  $\text{CO}_2\text{Ph}$ ,  $\text{CO}_2(\text{N-succinimidyl})$ ,  $\text{C}(\text{OMe})_3$ ,  $\text{C}(\text{OEt})_2$ ,  $\text{CON}(\text{OCH}_3)\text{CH}_3$ , CHO,  $\text{CH}_2\text{OH}$ , or  $\text{C}(\text{CH}_3)_2\text{OH}$ ; and

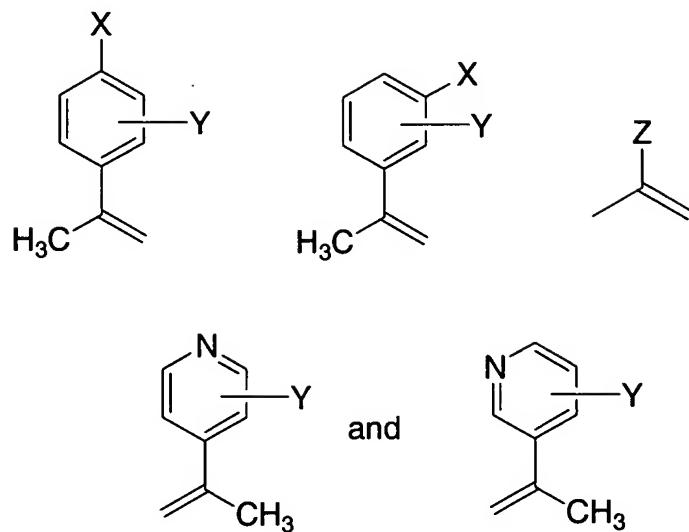
$\text{R}^4$  is



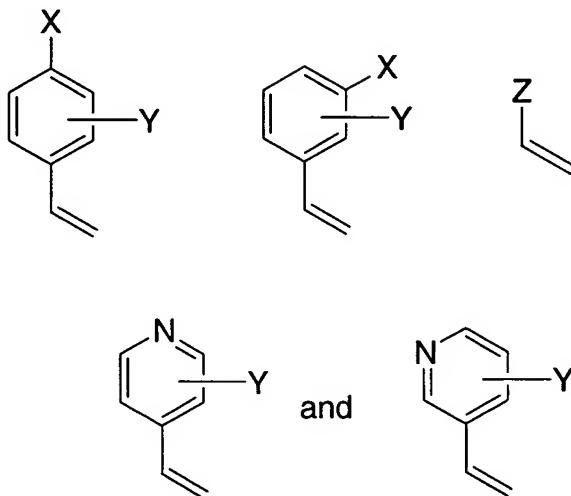
which comprises the step of microwave irradiating a mixture comprising a compound of the formula II



a compound VII selected from:

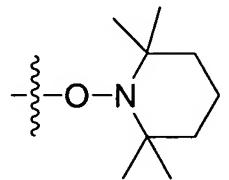


and a compound VIII selected from:

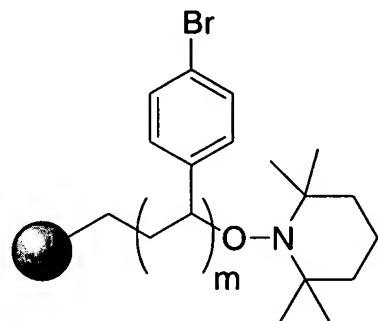


wherein the ratio of the compound VII and the compound VIII is about 2:1.

6. (Original) The process according to Claim 5 wherein  $R^4$  is

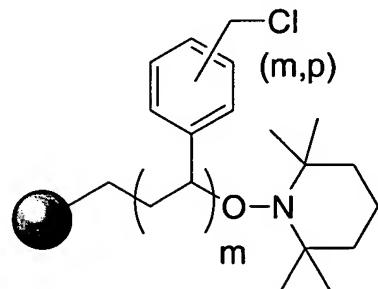


7. (Currently amended) The compound according to Claim 13 which is



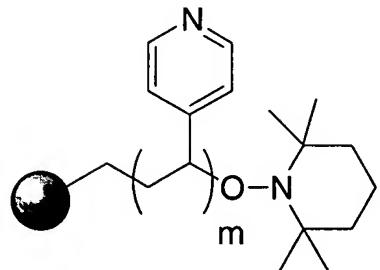
wherein is a polystyrene resin, m is from 1 to 100 and the bromine content is from about 4 to about 6 mmol/gram of resin.

8. (Currently amended) The compound according to Claim 13 which is



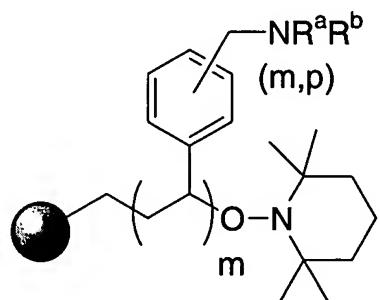
wherein is a polystyrene resin, m is from 1 to 100 and the chlorine content is from about 5 to about 7 mmol/gram of resin.

9. (Currently amended) The compound according to Claim 13 which is



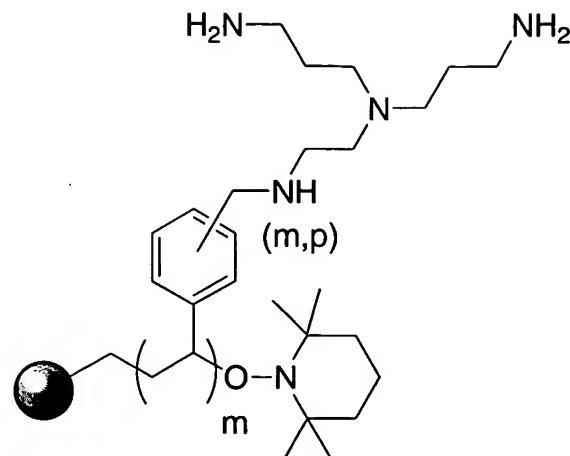
wherein is a polystyrene resin, m is from 1 to 100 and the pyridyl content is from about 5 to about 7 mmol/gram of resin.

10. (Currently amended) The compound according to Claim 13 which is



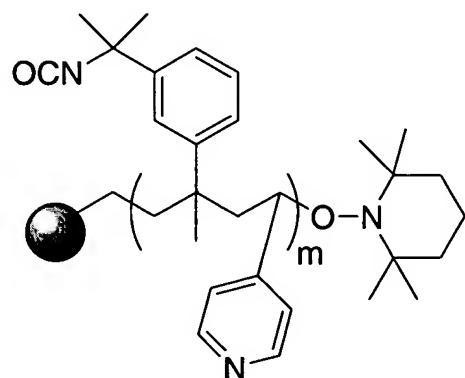
wherein is a polystyrene resin, m is from 1 to 100, -NR<sup>a</sup>R<sup>b</sup> is selected from diethylamino, diisopropylamino, piperidinyl, morpholino and piperazinyl and the amine content is from about 4 to about 7 mmol/gram of resin.

11. (Currently amended) The compound according to Claim 13 which is



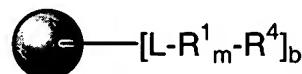
wherein is a polystyrene resin, m is from 1 to 100, and the amine content is from about 3 to about 6 mmol/gram of resin.

12. (Currently amended) The compound according to Claim 13 which is



wherein is a polystyrene resin, m is from 1 to 100, and the isocyanate content is from about 1 to about 4 mmol/gram of resin.

13. (New) A compound which is:

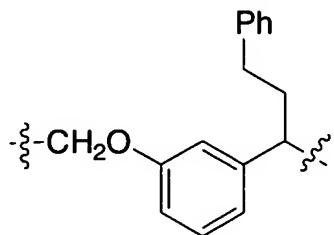


I

wherein



is an insoluble solid support selected from the group consisting of:  
 poly(styrene-divinylbenzene), macroreticular poly(styrene-divinylbenzene), polystyrene which is radiation grafted to polypropylene, polystyrene which is radiation grafted to polyethylene, polystyrene which is radiation grafted to poly(tetrafluoroethylene), and polystyrene which is radiation grafted to poly(ethylene-tetrafluoroethylene) wherein the insoluble solid support is in a shape selected from a bead, a tube, a rod, a ring, a disk, or a well; L is -CH<sub>2</sub>-, -C(CH<sub>3</sub>)<sub>2</sub>-, -CH(CH<sub>3</sub>)-, -(CH<sub>2</sub>)<sub>n</sub>CH(CN)-, -(CH<sub>2</sub>)<sub>n</sub>CH(CO<sub>2</sub>Me)-, -(CH<sub>2</sub>)<sub>n</sub>CH(Ph)-, -(CH<sub>2</sub>)<sub>n</sub>C(CH<sub>3</sub>, Ph)-, -CH(CH<sub>2</sub>CH<sub>2</sub>Ph)-, or

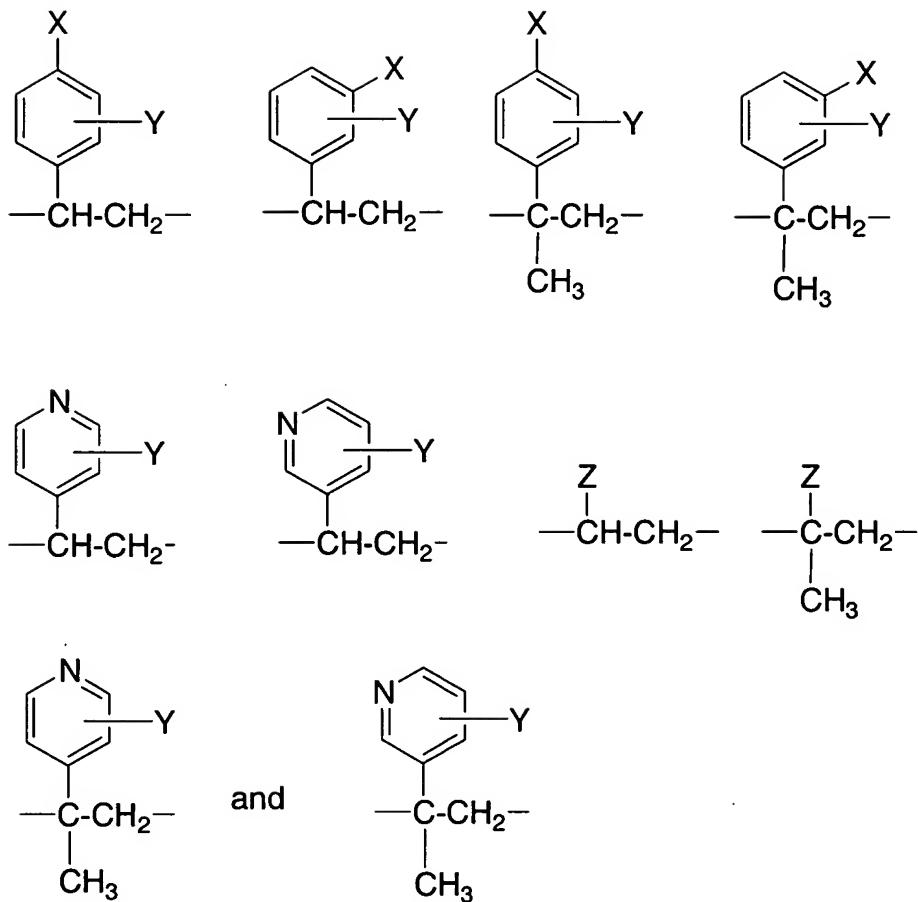


n is zero or an integer from 1 to 5;

m is zero or an integer from 1 to 100;

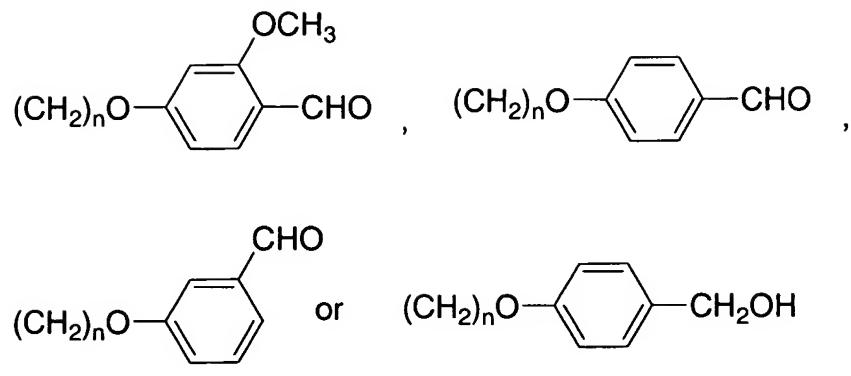
b is mMol content of initiator or solid-supported polymer per gram of insoluble solid support and is about 0.1 to about 5.0 mMol per gram;

R<sup>1</sup> is selected from:



wherein

X is H, F, (CH<sub>2</sub>)<sub>n</sub>Cl, (CH<sub>2</sub>)<sub>n</sub>Br, (CH<sub>2</sub>)<sub>n</sub>I, B(OH)<sub>2</sub>, (CH<sub>2</sub>)<sub>n</sub>CH=CH<sub>2</sub>, NCO, CH<sub>2</sub>NCO, CH(CH<sub>3</sub>)NCO, C(CH<sub>3</sub>)<sub>2</sub>NCO, CO<sub>2</sub>Me, CO<sub>2</sub>Et, CO<sub>2</sub>(t-Bu), CO<sub>2</sub>H, COC1, CO<sub>2</sub>CH(CF<sub>3</sub>)<sub>2</sub>, CO<sub>2</sub>Ph, CO<sub>2</sub>(pentafluorophenyl), CO<sub>2</sub>(pentachlorophenyl), CO<sub>2</sub>(N-succinimidyl), C(OMe)<sub>3</sub>, C(OEt)<sub>3</sub>, (CH<sub>2</sub>)<sub>n</sub>OH, (CH<sub>2</sub>)<sub>n</sub>CH(OH)CH<sub>2</sub>OH, (CH<sub>2</sub>)<sub>n</sub>SH, CH<sub>2</sub>NHCH<sub>2</sub>CH<sub>2</sub>SH, (CH<sub>2</sub>)<sub>n</sub>NHC(=S)NH<sub>2</sub>, (CH<sub>2</sub>)<sub>n</sub>NH<sub>2</sub>, (CH<sub>2</sub>)<sub>n</sub>N(Me)<sub>2</sub>, (CH<sub>2</sub>)<sub>n</sub>N(Et)<sub>2</sub>, (CH<sub>2</sub>)<sub>n</sub>(iPr)<sub>2</sub>, CH(CH<sub>3</sub>)NH<sub>2</sub>, C(CH<sub>3</sub>)<sub>2</sub>NH<sub>2</sub>, CH<sub>2</sub>NHCH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>, CH<sub>2</sub>NHCH<sub>2</sub>CH<sub>2</sub>NHCH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>, CH<sub>2</sub>N(CH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>)<sub>2</sub>, CH<sub>2</sub>NHCH<sub>2</sub>CH<sub>2</sub>N(CH<sub>2</sub>CH<sub>2</sub>NH<sub>2</sub>)<sub>2</sub>, CH<sub>2</sub>N(CH<sub>2</sub>CH<sub>2</sub>O<sub>2</sub>H)<sub>2</sub>, (CH<sub>2</sub>)<sub>n</sub>(morpholin-4-yl), (CH<sub>2</sub>)<sub>n</sub>(piperidin-1-yl), (CH<sub>2</sub>)<sub>n</sub>(4-methylpiperazin-1-yl), N(SO<sub>2</sub>CF<sub>3</sub>)<sub>2</sub>, (CH<sub>2</sub>)<sub>n</sub>CHO, (CH<sub>2</sub>)<sub>n</sub>Si(Me)<sub>2</sub>H, (CH<sub>2</sub>)<sub>n</sub>Si(Et)<sub>2</sub>H, (CH<sub>2</sub>)<sub>n</sub>Si(iPr)<sub>2</sub>H, (CH<sub>2</sub>)<sub>n</sub>Si(tBu)<sub>2</sub>H, (CH<sub>2</sub>)<sub>n</sub>Si(Ph)<sub>2</sub>H, (CH<sub>2</sub>)<sub>n</sub>Si(Ph)(tBu)H, (CH<sub>2</sub>)<sub>n</sub>Si(Me)<sub>2</sub>C1, (CH<sub>2</sub>)<sub>n</sub>Si(Et)<sub>2</sub>Cl, (CH<sub>2</sub>)<sub>n</sub>Si(i-Pr)<sub>2</sub>Cl, (CH<sub>2</sub>)<sub>n</sub>Si(tBu)<sub>2</sub>Cl, (CH<sub>2</sub>)<sub>n</sub>Si(Ph)<sub>2</sub>Cl, (CH<sub>2</sub>)<sub>n</sub>Si(tBu)(Ph)Cl, P(Ph)<sub>2</sub>, P(o-tolyl)<sub>2</sub>,



wherein n is zero or an integer from 1 to 5 ;

Y is H, Cl, Br, F, OH, or OMe;

Z is NCO, CO<sub>2</sub>Me, CO<sub>2</sub>Et, CO<sub>2</sub>(i-Pr), CO<sub>2</sub>(n-Bu), CO<sub>2</sub>(t-Bu), CN, CO<sub>2</sub>H, COCl, CO<sub>2</sub>CH(CF<sub>3</sub>)<sub>2</sub>, CO<sub>2</sub>(pentafluorophenyl), CO<sub>2</sub>(pentachlorophenyl), CO<sub>2</sub>Ph, CO<sub>2</sub>(N—succinimidyl), C(OMe)<sub>3</sub>, C(OEt)<sub>2</sub>, CON(OCH<sub>3</sub>)CH<sub>3</sub>, CHO, CH<sub>2</sub>OH, or C(CH<sub>3</sub>)<sub>2</sub>OH;  
and

R<sup>4</sup> is

